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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/630,711	08/01/2000	Bjorn Markus Jakobsson	3037-4196	7518
7590 Morgan & Finnegan LLP 345 Park Avenue New York, NY 10154-0053		02/23/2007	EXAMINER MOORTHY, ARAVIND K	
			ART UNIT 2131	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/23/2007	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/630,711

Applicant(s)

JAKOBSSON ET AL.

Examiner

Aravind K. Moorthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. This is in response to the arguments filed on 5 December 2006.
2. Claims 1-31 are pending in the application.
3. Claims 1-31 have been rejected.

#### *Response to Arguments*

4. Applicant's arguments filed 5 December 2006 have been fully considered but they are not persuasive.

On page 7, the applicant argues that the limitation “generating a computational task by a first server for a certain amount of intense computation in a specified period of time as a POW to accomplish a separate, useful and verifiable correct computation” has support on page 3, line 13 continuing to page 4, line 2.

The examiner respectfully disagrees. The applicant has shown support for a first server. However, there is no support for “**certain amount of intense** computation” (emphasis added on bold type). For “to accomplish a separate, useful and verifiable correct computation”, the applicant points to “entity 1 verifies the response” for support. By only saying that entity 1 verifies a response, it is not enough support for accomplishing a separate, useful and verifiable correct computation. The applicant further points to page 2, lines 14-17 for support as well. However, there is no support in this section for the server performing these computations.

On page 9, the applicant argues that definitions for the phrases “certain amount” and “intense” on page 5, line 12 continuing to page 6, line 4 of the specification.

The examiner respectfully disagrees. The examiner takes note of the two definitions provided. However, the examiner asserts that the applicant has not provided any way of

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measuring a “certain amount” of intense computation. Also, the applicant has not provided any measure for the intensity of the computation.

On page 10, the applicant points the examiner’s attention to page 1, line 13-16 for a definition of “useful”.

The applicant points out that POWs have served as the basis for a number of data security applications including, benchmarking, server access metering, construction of digital time capsules, and protection against spamming and other denial-of-service attacks. The examiner acknowledges that these are useful applications for a POW. However, the examiner does not find this to be support for a “useful” computation.

On page 11, the applicant argues that claims 1-31 describe a statutory process, which incorporates into the process a computerized computation.

The examiner respectfully disagrees. The independent claims are directed towards a method of using a computational effort invested in a proof of work (POW), the method executable in one or more processors in communication with one or more memory devices having embodied therein stored programs for performing the method. The applicant has not shown any tangible result in any of the independent claims.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 31 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 31 recites the limitation “generating a computational task by a first server for a certain amount of intense computation in a specified period of time as a POW to accomplish a separate, useful and verifiable correct computation”. There is no support in the specification for this limitation.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 24 and 31 recite the limitation “generating a computational task by a first server for a certain amount of intense computation in a specified period of time as a POW to accomplish a separate, useful and verifiable correct computation”. The examiner asserts that the phrases “certain amount”, “intense” and “useful” as indefinite terms.

*Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The independent claims are directed towards a method of using a computational effort invested in a proof of work (POW), the method executable in one or more processors in communication with one or more memory devices having embodied therein stored programs for performing the method. When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer."). Such a result would exalt form over substance. In *re Sarkar*, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978) ("[E]ach invention must be evaluated as claimed; yet semantogenic considerations preclude a determination based solely on words appearing in the claims. In the final analysis under Sec. 101, the claimed invention, as a whole, must be evaluated for what it is.") (quoted with approval in *Abele*, 684 F.2d at 907, 214 USPQ at 687). See also *In re Johnson*, 589 F.2d 1070, 1077, 200 USPQ 199, 206 (CCPA 1978) ("form of the claim is often an exercise in drafting").

*Allowable Subject Matter*

8. Claims 1-31 are allowed.

As to claims 1 and 29, prior art does not disclose, suggest or teach distributing a computational task among a plurality of entities for execution within a specified interval of time as a POW. Prior art does not disclose, suggest or teach receiving the POW relating to the task from one of the plurality of entities. Prior art does not disclose, suggest or teach using the POW to accomplish the task. Prior art does not disclose, suggest or teach distribution of the POW as a POW.

As to claims 5 and 13, prior art does not disclose, suggest or teach partitioning a minting operation into a plurality of sub-computational tasks. Prior art does not disclose, suggest or teach distributing one of the plurality of sub-computational tasks to one of a plurality of entities. Prior art does not disclose, suggest or teach receiving a POW from the one of the plurality of entities. Prior art does not disclose, suggest or teach using the POW to accomplish the minting operation. Prior art does not disclose, suggest or teach distribution of the POW as a POW.

As to claim 30, prior art does not disclose, suggest or teach a first entity partitioning a minting operation into a plurality of sub-computational tasks. Prior art does not disclose, suggest or teach distributing one of the plurality of sub-computational tasks by the first entity to one of a plurality of second entities. Prior art does not disclose, suggest or teach receiving at the first entity a POW from the one of the plurality of entities. Prior art does not disclose, suggest or teach using the POW by the first entity to accomplish the minting operation. Prior art does not disclose, suggest or teach re-using of the POW as a POW in another task.

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As to claims 24 and 31, prior art does not disclose, suggest or teach generating a computational task for a certain amount of intense computation in a specified period of time as a POW to accomplish a separate, useful and verifiable correct computation. Prior art does not disclose, suggest or teach distributing the computational task for execution among a plurality of server entities receiving a POW relating to the task from one of the plurality of the server entities. Prior art does not disclose, suggest or teach using the POW to verify and accomplish the computational task, and distribution of the POW as a POW.

Any claims not directly addressed are allowed on the virtue of their dependency.



***Conclusion***

**9. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aravind K Moorthy   
February 16, 2007

  
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